

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2020/0081527 A1 Agaoglu et al.

Mar. 12, 2020 (43) Pub. Date:

(54) GAZE-DEPENDENT DISPLAY ENCRYPTION

Applicant: Apple Inc., Cupertino, CA (US)

Inventors: Mehmet Agaoglu, Cupertino, CA (US); Cheng Chen, San Jose, CA (US); Harsha Shirahatti, Santa Clara, CA (US); Zhibing Ge, Los Altos, CA (US); Shih-Chyuan Fan Jiang, San Jose, CA (US); Nischav Goel, San Jose, CA (US); Jiaving Wu, San Jose, CA (US); William Sprague, Berkeley, CA (US)

Appl. No.: 16/565,298

(22)Filed: Sep. 9, 2019

Related U.S. Application Data

(60) Provisional application No. 62/729,372, filed on Sep. 10, 2018.

Publication Classification

(51) Int. Cl. G06F 3/01 (2006.01)G06K 9/00 (2006.01)G02B 27/00 (2006.01) (52) U.S. Cl.

CPC G06F 3/013 (2013.01); G06K 9/0061 (2013.01); G02B 27/0093 (2013.01); G06F 3/012 (2013.01); G06K 9/00248 (2013.01)

(57)**ABSTRACT**

Aspects of the subject technology relate to gaze-dependent visual encryption of electronic device displays. Each display frame that is displayed on the electronic device display may include a clear-display region around the user's gaze location and an obscured region outside the clear-display region. In this way, only the display content that the user is actively viewing is recognizable and understandable and an onlooker such as an unwanted observer looking over the user's shoulder is unable to understand what is displayed. The obscured region of each display frame may be generated such that the overall look and structure of that region is unchanged, but the content is unintelligible. In this way, the visual experience of the user is not disrupted or distracted by the visual encryption and the eye of the onlooker is not guided to the clear-display region by the visual encryption.

